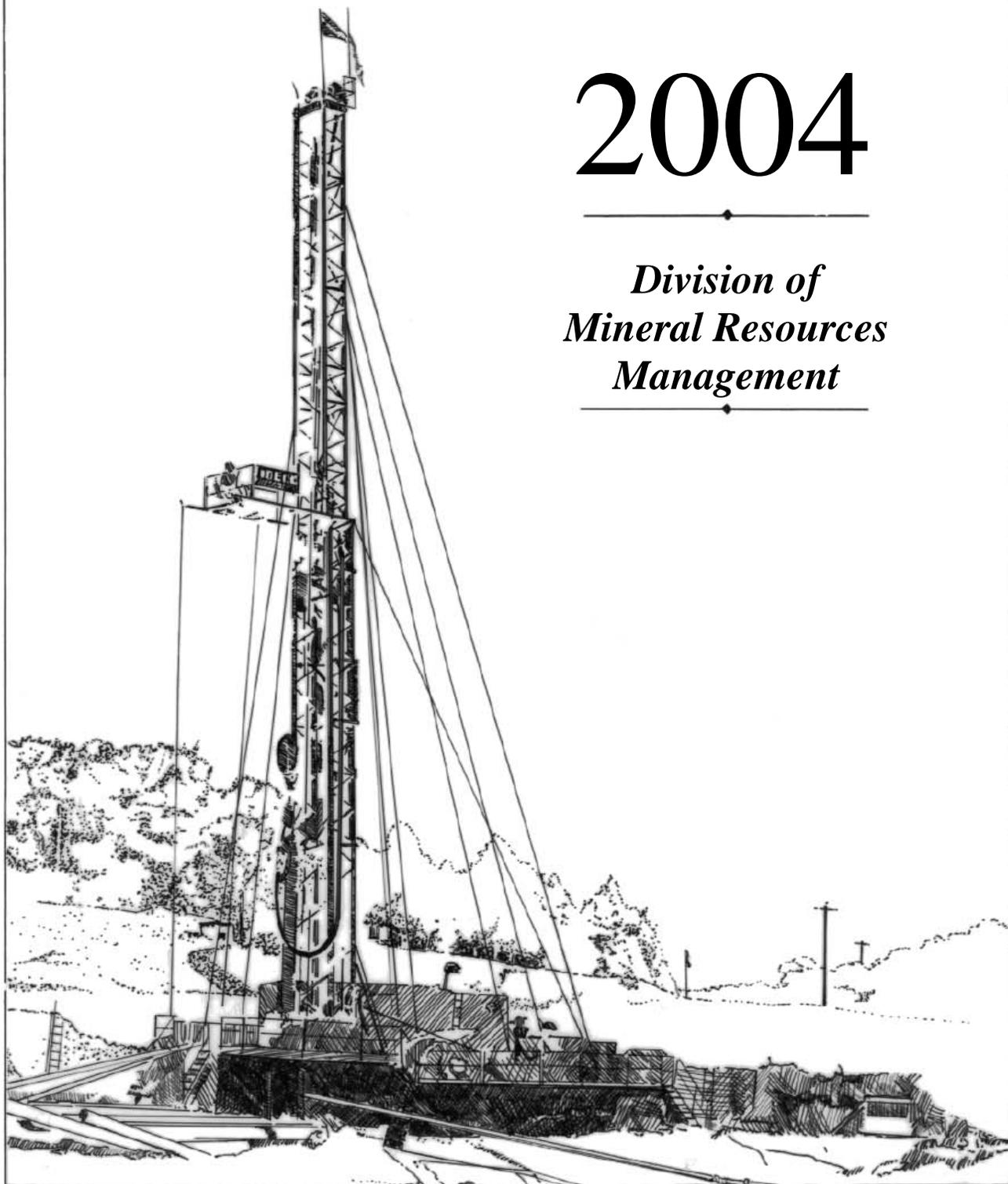


SUMMARY OF OHIO OIL AND GAS ACTIVITIES

2004

*Division of
Mineral Resources
Management*



Who We Are

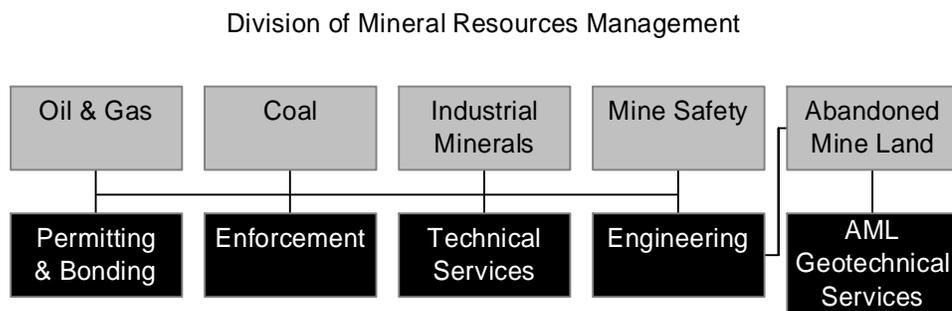
The Division of Mineral Resources Management (DMRM) was created in July 2000 with the consolidation of two existing Divisions of the Ohio Department of Natural Resources (Divisions of Oil and Gas, Mines and Reclamation). The merging of staff and resources builds a more efficient management structure to better serve the state and the citizens of Ohio.

It is the division's mission to provide for the responsible development of Ohio's energy and mineral resources in a safe, environmentally sound manner. Diverse and comprehensive programs address the environmental and safety aspects of the coal and mineral mining, and oil and gas extraction industries while maintaining high standards of regulatory effectiveness.

Program and support services include Permitting/Hydrology/Bonding, Field Inspection/Enforcement, Abandoned Mine Land, Engineering and Design Services, Mine Safety, Technical Support Services, and Administration/Human Resources/Financial Support.

Expertise is provided by a professional staff of geologists, environmental specialists, engineers, blasting specialists, soil scientists, hydrologists, archaeologists, and hydrogeologists.

Funding for programs comes from severance taxes on coal, minerals, oil and gas; federal grants; and general revenue funds.



Introduction

This fortieth edition of the Summary of Ohio Oil & Gas Activities (**The McCormac Report**) remains dedicated to accurately presenting statistics that may reflect trends important to Ohio's oil and gas industry, citizens and other governmental agencies. This report includes data submitted through March 11, 2005. You may also note that some 2003 statistics have been adjusted to include well completion reports received after last year's cut-off date. The 2003 report estimated 508 wells were drilled; the total number has been revised to 516. There are no major revisions in this years report.

Highlights include:

- 5,465 registered well owners, including 3,884 domestic owners, operating 62,852 wells.
- Drilled an estimated 578 oil and gas wells in 42 of Ohio's 88 counties.
- Monroe County was the most active county with 47 wells drilled.
- Produced 5,785,338 barrels of crude oil, at an average price of \$38.00 per barrel.
- Produced over 90 billion cubic feet of natural gas, at an average price of \$6.65 per mcf.
- The combined market value of crude oil and natural gas production was \$796,982,247, up 12.5% from 2003.
- 572 wells were plugged including 75 contracted by the Orphan Well Program.

To make oil and gas well data more accessible, the Division completed:

- Scanning and indexing approximately 900,000 permitting documents.
- Integrating the permitting, microfilmed and NGPA images into one database.
- Set-up an in-house system to scan and index permitting documents on a daily basis.

We are currently working on:

- Loading all scanned images into portable hard drives making them available initially to our field staff and then to the industry and public.
- Rules implementing House Bills 278 & 299, including Best Management Practices for well site construction and water sampling.
- Updating our oil and gas well database, RBDMS, with historical well information.
- Making all scanned images available on our website.

Mike McCormac
Geologist, DMRM Permitting Program

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Permitting

The Division issued 1,918 permits, an increase of 284 (17.4%) from 2003 (Figure 1). This total includes permits issued to convert, deepen, drill, plug back, plug and abandon, reissue and reopen. Permits were issued in 14 days on average, compared to 13 days in 2003.

Eight hundred and fifteen permits were issued to drill for oil and gas, a 12.4% increase from last year. These permits included 711 new permits and 104 reissued permits. Clinton sandstone permits increased by 86 for a total of 439 and accounted for 54% of all drill permits. Deep well permits decreased by 7 for a total of 186 and accounted for 23% of all drill permits. Deep well permits are those issued to drill to formations below the Cambro-Ordovician Knox unconformity such as the Beekmantown dolomite, Rose Run sandstone, Trempealeau dolomite and Mt. Simon Sandstone. Devonian shale permits increased by 31 for a total of 128 and accounted for 16% of all drill permits.

One thousand and thirteen plugging permits were issued, an increase of 172 (20.5%) from 2003, which includes 30 permits for the Orphan Well Program.

Notable permitting highlights for 2004 include:

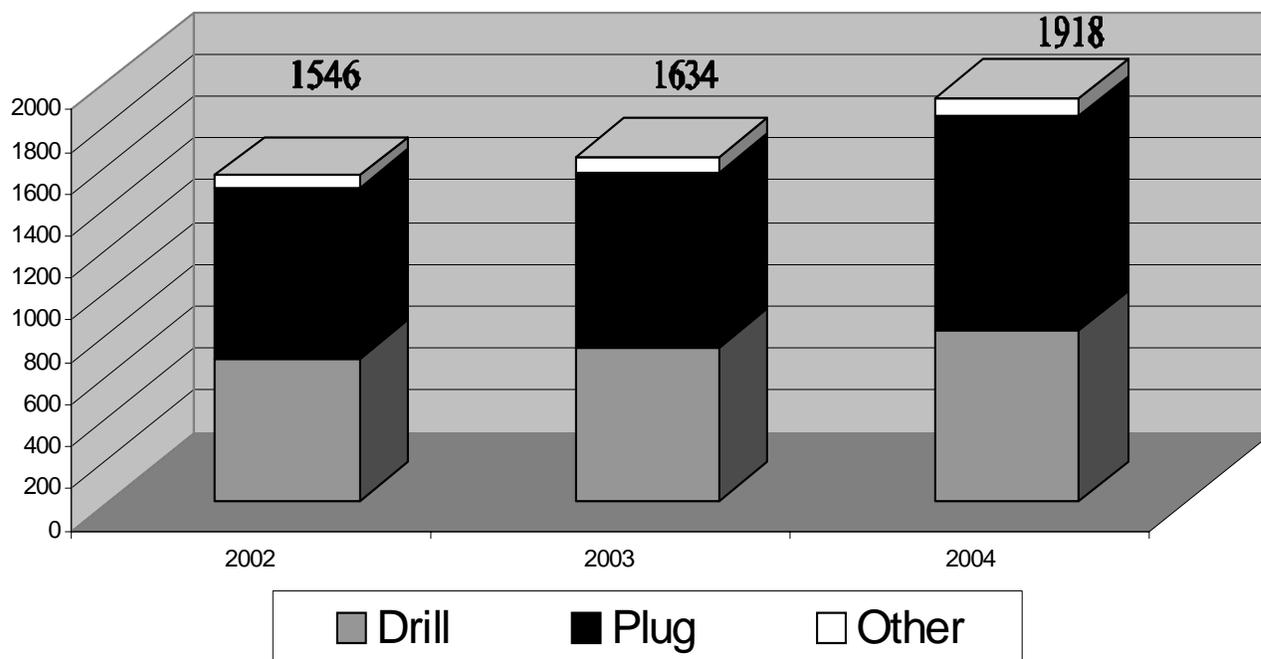
- Commenced scanning and indexing the approximately 900,000 nonimaged permitting records.
- Begun implementation of House Bills 278 and 299.
- Reviewed 17 mandatory pooling applications.
- Processed a record number (47,315) production reports for 2003.

Bonding/Ownership

Oil and gas well bond release does not occur until an owner has successfully plugged and restored or transferred ownership and liability of *all* oil & gas wells under the operator's permits in Ohio. During 2004, 88 bonds were released and 173 new owners were registered.

Section staff also manages all information and records concerning current well ownership and well transfers. During 2004, records were managed for 5,465 registered well owners including 3,884 domestic owners and 1,581 commercial owners. Staff also recorded 3,572 changes in well ownership. There are 62,852 active wells in Ohio.

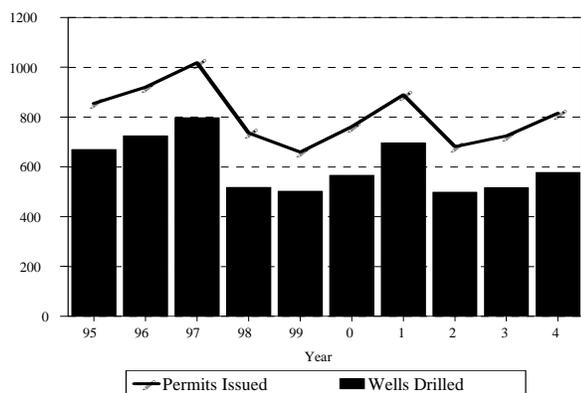
Figure 1 - Oil & Gas Permits Issued 2002 - 2004



Drilling

Strong market prices and the passage of House Bills 278 & 299 led to increase in the number of wells drilled. In 2004, an estimated 578 oil and gas wells were drilled, which was an increase of 62 wells (10.7%) from 2003 (Figure 2). It was the second highest year since 1997 (Appendix I). Wells were drilled in 42 of Ohio's 88 counties (Figure 3).

Figure 2 - Drill Permits vs. Wells Drilled 1995 - 2004



Completions

Of the well completion reports submitted to the division by March 11, 2005, 446 were productive and 55 were dry holes, for a 89% completion rate - (Table I).

- Total footage is estimated at 2,374,614 feet compared to 2,173,645 for 2003.
- Average well depth was 4,108 feet, a decrease of 105 feet per well.
- The median well depth was 4,200 feet.
- Total depths ranged from 310 feet in the Cow Run Sandstone (Athens County) to 9,030 feet in the Rose Run Sandstone (Noble County).

A summary of oil and gas completion statistics by county appears in Table II.

Completion zones ranged from the Pennsylvanian Coal to the Precambrian granite. Licking county had wells drilled to six different geologic zones. The Ohio Shale, Clinton sandstone and Rose Run sandstone accounted for 82% of all wells drilled. A summary of oil and gas completion statistics by producing zones appears in Table III.

Formation Highlights

The Clinton sandstone was the most actively drilled zone with 54% percent of all wells drilled. An estimated 310 wells were drilled, 61 more than the 249 wells drilled in 2003. Clinton sandstone wells averaged 4,322 feet in depth, a decrease of 43 feet per well. Clinton sandstone wells were drilled in 26 counties, one more than last year. The most active counties were: Stark (41), Coshocton (30), Lake (27), Cuyahoga (25) and Mahoning (20).

An estimated 99 wells were drilled to the Ohio Shale, an increase of 40 wells. Drilling occurred in 12 counties including 4 horizontal wells in Gallia (1), Lawrence (2) and Meigs (1) counties. Monroe County led with 46 wells followed by Noble (23) and Huron (8). The average depth per well was 2,354 feet.

An estimated 66 Rose Run Sandstone wells were drilled, a decrease of 16 wells. Drilling occurred in 14 counties with Ashtabula (18), Coshocton and Muskingum (10 each) the most active. The average depth per well was 6,222 feet, an increase of 136 feet per well.

Drilling to the Cambrian Trempealeau dolomite decreased by 16 wells to 24. Wayne County (7) was the most active county followed by Knox (5). Trempealeau drilling occurred in 12 counties. The average depth per well was 4,542 feet, an increase of 619 feet per well.

An estimated 29 Berea Sandstone wells were drilled, the same as last year. Drilling occurred in 10 counties. Morgan led with 9 wells.

Wells Completed by Month and Owner

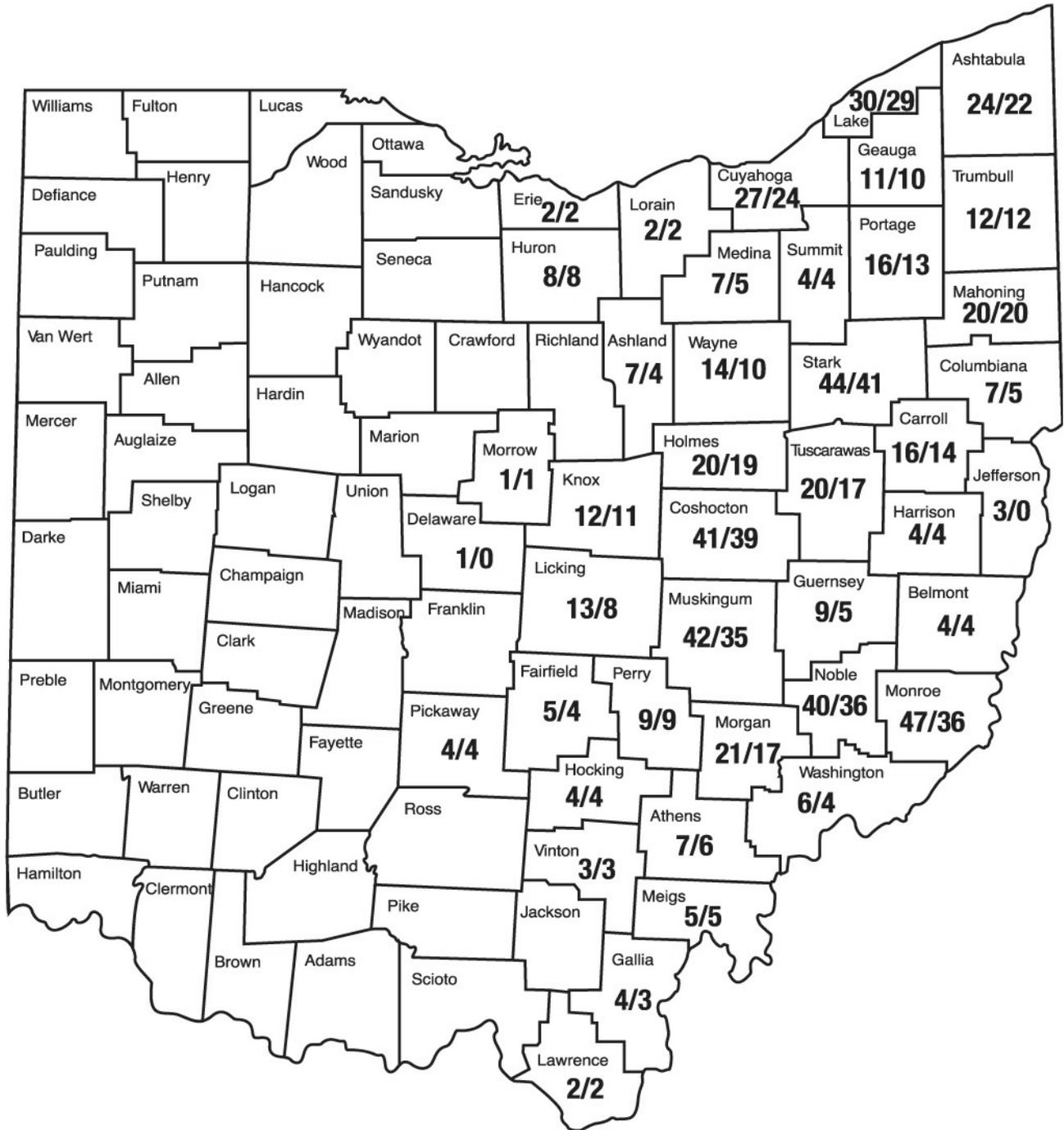
Drilling activity averaged 48 wells per month. October was the most active month with 65 wells (Figure 4).

One hundred and sixteen owners drilled wells in 2004. Eighty-six percent of these owners drilled 10 wells or less. The highest number of wells drilled by a single owner was 63 (Figure 5) and sixteen operators drilled 57% of all wells.

Wells Completed by Type of Tool

Rotary tools drilled the majority of wells. Cable-tool rigs drilled 28 wells and operated in 11 counties. Knox (6) County had the highest number of cable tool operations. Cable tool depths ranged from 310 feet

Figure 3 - Wells Drilled and Completions Received by County



(Athens County) to 3,194 feet (Coshocton County). The average depth per well drilled by cable tool was 1,503 feet; rotary-drilled wells averaged 4,241 feet, a decrease of 96 feet per well.

Plug-back and Deepen Operations

Nineteen new wells were dry in their permitted formation but plugged back to produce a shallower zone. Forty existing wells were plugged back to producing zones, and 3 existing wells were drilled to a deeper producing formation.

TABLE I – DRILLING OPERATIONS BY TYPE OF WELL – 2004			
	Drilled	Converted	Total Footage
Productive Wells	446		1,777,294
Dry Holes	55		281,004
Reopened Wells	13		-0-
Lost Holes	4		7,220
Gas Storage Wells	1	0	2,765
Conventional Brine Injection Wells	1	0	1,320
Enhanced Recovery Wells	0	0	-0-
Solution Mining Wells	2	0	5,263
TOTAL	522	0	2,074,866

Ten Most Active Counties

Monroe County, ranked six in 2003, was the most active county with 47 wells drilled, an increase of 14 wells (Table IV). Stark County had an increase of a well but slipped one place to second. Several counties had significant increases in drilling. The biggest increases occurred in Noble (21), Cuyahoga (14), Lake and Coshocton (11 each). The biggest decreases took place in Tuscarawas (16), Ashtabula (15) and Lawrence County (14).

Due to a three way tie for tenth place, there were 3 new counties in the top ten. Cuyahoga, Holmes and Lake replaced Wayne County. Holmes was last listed in the top ten in 2000; both Cuyahoga and Lake are in the top ten for the first time ever.

Directional Drilling

Twenty-eight directional drilling permits were issued to drill wells in thirteen counties, a decrease of 15 permits. The most active counties were Cuyahoga (6), Stark and Summit (4 each). The majority of directional drilling permits (20) targeted the Clinton. One horizontal permits targeted the Ohio Shale.

Exploratory Wells

Approximately 7% (42) of all wells completed were classified as exploratory (Figure 6). Sixteen wells were productive and 26 were dry holes, representing a 38% success rate. The following counties were the most active: Muskingum (6), Noble (5), Ashtabula, Columbiana and Holmes (4 each).

The majority of exploratory wells were drilled as either 'deeper pool wildcats' (22) or 'outposts' (15). Wells classified as 'deeper pool wildcats' had a productive rate of 18% and 'outposts' had a productive rate of 60%.

Wells drilled below the Knox unconformity accounted for 67% (28) of all exploratory drilling; 5 of these wells (18%) were productive. The Cambro-Ordovician Rose Run sandstone accounted for 14 of these wells; 3 were productive. The Cambrian Trempealeau dolomite had 6 exploratory tests, of which 1 was productive. One of the five exploratory wells drilled to the Ordovician Beekmantown dolomite was productive. One well was drilled to the Kerbel and 2 to the Precambrian; all were dry.

TABLE II - OIL AND GAS COMPLETION STATISTICS BY COUNTY – 2004

County	Depth Range of Reservoirs		Major Targeted Reservoirs	Development		Exploratory		Total Wells	Percent Productive	Drilled Footage		
	Shallow	Deep		Productive	Dry	Productive	Dry			Productive	Dry	Total
Ashland	522	2,042	Berea	2	2	0	0	4	50.00	1,355	2,712	4,067
Ashtabula	2,720	6,264	Rose Run	17	1	2	2	22	86.36	100,377	18,485	118,862
Athens	304	2,498	Cow Run	5	0	1	0	6	100.00	9,204	0	9,204
Belmont	1,901	2,984	Ohio Shale	3	0	1	0	4	100.00	10,419	0	10,419
Carroll	4,906	5,499	Clinton	14	0	0	0	14	100.00	75,387	0	75,387
Columbiana	5,494	8,525	Clinton	1	0	1	3	5	40.00	11,945	22,570	34,515
Coshocton	3,029	6,283	Clinton	34	3	0	2	39	87.18	147,525	30,111	177,636
Cuyahoga	2,723	5,249	Clinton	23	0	0	1	24	95.83	78,239	5,249	83,488
Erie	943	3,832	Trenpealeau	1	0	0	1	2	50.00	1,680	3,832	5,512
Fairfield	3,372	4,273	Rose Run	2	2	0	0	4	50.00	7,136	8,377	15,513
Gallia	1,710	7,146	Berea	2	0	0	1	3	66.67	3,960	7,146	11,106
Geauga	3,745	4,163	Clinton	10	0	0	0	10	100.00	41,944	0	41,944
Guemsey	4,653	7,671	Beekmantown	3	0	0	2	5	60.00	19,415	15,122	34,537
Harrison	500	5,660	Coal	4	0	0	0	4	100.00	7,492	0	7,492
Hocking	2,652	4,662	Clinton	2	1	0	1	4	50.00	5,615	9,015	14,630
Holmes	3,178	6,356	Clinton	13	2	1	3	19	73.68	58,743	30,047	88,790
Huron	365	1,100	Ohio Shale	0	7	1	0	8	12.50	716	6,581	7,297
Knox	749	4,762	Clinton	10	1	0	0	11	90.91	32,274	4,762	37,036
Lake	1,701	6,355	Clinton	27	0	1	1	29	96.55	90,164	6,355	96,519
Lawrence	1,663	4,262	Ohio Shale	1	0	1	0	2	100.00	8,072	0	8,072
Licking	609	5,116	Rose Run	8	0	0	0	8	100.00	20,916	0	20,916
Lorain	95	798	Ohio Shale	2	0	0	0	2	100.00	1,582	0	1,582
Mahoning	4,854	5,905	Clinton	20	0	0	0	20	100.00	110,897	0	110,897
Medina	2,622	3,260	Clinton	5	0	0	0	5	100.00	15,148	0	15,148
Meigs	2,074	4,245	Ohio Shale	5	0	0	0	5	100.00	19,427	0	19,427
Monroe	1,665	3,103	Ohio Shale	35	0	1	0	36	100.00	93,374	0	93,374
Morgan	350	6,189	Clinton	16	0	1	0	17	100.00	56,905	0	56,905
Morrow	3,104	3,223	Trenpealeau	0	1	0	0	1	0.00	0	3,209	3,209
Muskingum	3,199	6,631	Clinton	25	4	3	3	35	80.00	141,775	44,883	186,658
Noble	1,338	9,030	Ohio Shale	31	0	1	4	36	88.89	106,820	27,893	134,713
Perry	990	3,740	Clinton	8	0	1	0	9	100.00	23,440	0	23,440
Pickaway	2,354	2,635	Trenpealeau	2	1	0	1	4	50.00	4,830	5,035	9,865
Portage	4,082	7,501	Clinton	13	0	0	0	13	100.00	62,996	0	62,996
Stark	3,923	6,669	Clinton	41	0	0	0	41	100.00	204,370	0	204,370
Summit	3,548	4,181	Clinton	4	0	0	0	4	100.00	15,856	0	15,856
Trumbull	4,232	5,150	Clinton	12	0	0	0	12	100.00	57,512	0	57,512
Tuscarawas	3,631	7,706	Clinton	15	1	0	1	17	88.24	81,357	14,395	95,752
Vinton	1,200	1,320	Berea	3	0	0	0	3	100.00	4,189	0	4,189
Washington	1,545	4,571	Ohio Shale	3	1	0	0	4	75.00	10,016	4,571	14,587
Wayne	3,063	5,555	Clinton	8	2	0	0	10	80.00	34,222	10,654	44,876
TOTAL				430	29	16	26	501	89.02	1,777,294	281,004	2,058,298

TABLE III - OIL AND GAS COMPLETION STATISTICS BY PRODUCING ZONE – 2004

Producing Zones	Reservoir Depth Range		Development Wells		Exploratory Wells		Total Wells	Percent Productive	Drilled Footage		
	Shallow	Deep	Productive	Dry	Productive	Dry			Productive	Dry	Total
Pennsylvanian (Coal - Cow Run)	304	555	5	0	1	0	6	100.00	2,678	0	2,678
Mississippian (Squaw)	1,665	1,680	1	0	0	0	1	100.00	1,775	0	1,775
Mississippian (1st & 2nd Berea)	522	2,076	21	1	1	1	24	91.67	29,784	2,185	31,969
Devonian (Ohio Shale)	95	2,932	71	7	5	0	83	91.57	188,835	6,581	195,416
Devonian (Oriskany)	1,701	4,571	4	1	1	0	6	83.33	17,887	4,571	22,458
Silurian (Salina - Newburg)	943	2,206	2	1	0	0	3	66.67	3,886	2,042	5,928
Silurian (Clinton - Medina)	2,074	6,411	278	0	1	1	280	99.64	1,210,223	6,045	1,216,268
Ordovician (Black River – Gull River)	4,097	6,472	1	0	2	1	4	75.00	19,908	4,662	24,570
Ordovician (Beekmantown)	5,823	8,525	11	0	1	4	16	75.00	80,342	29,232	109,574
Cambro-Ordovician (Rose Run)	2,525	9,030	24	15	3	11	53	50.94	165,466	164,318	329,784
Cambrian (Trempealeau)	2,354	7,146	12	4	1	5	22	59.09	56,510	43,420	99,930
Cambrian (Kerbel - Precambrian)	5,184	6,355	0	0	0	3	3	0.00	0	17,948	17,948
TOTAL			430	29	16	26	501	89.02	1,777,294	281,004	2,058,298

Figure 4 - Wells Completed by Month 2003 - 2004

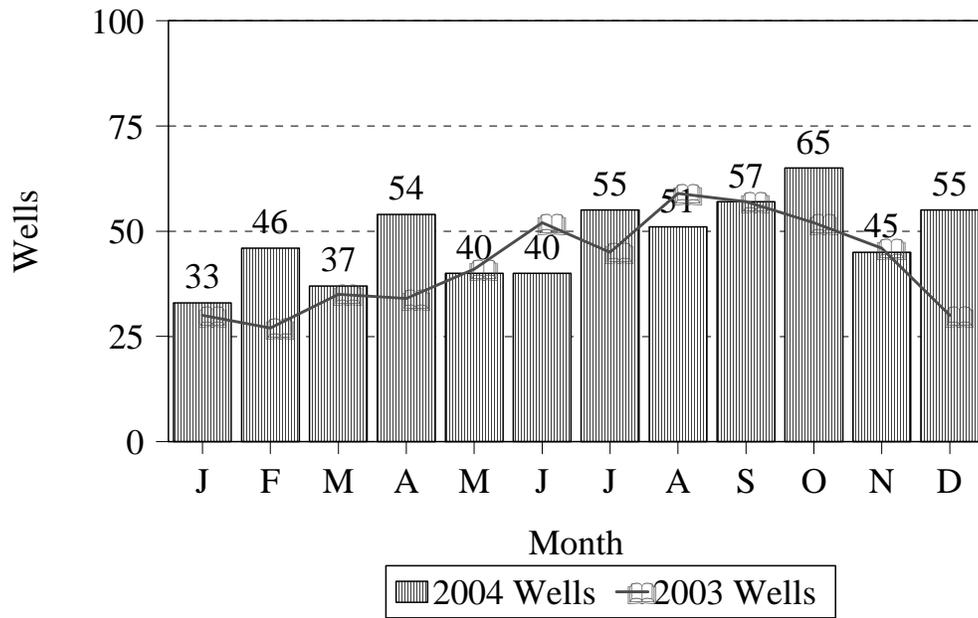


Figure 5 - Wells Completed by Owner 2004

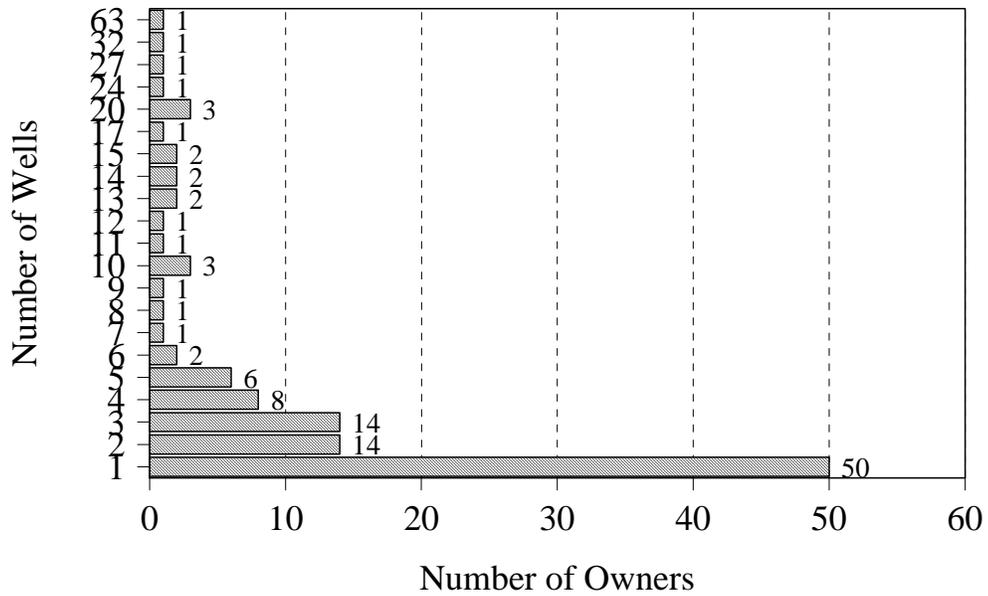
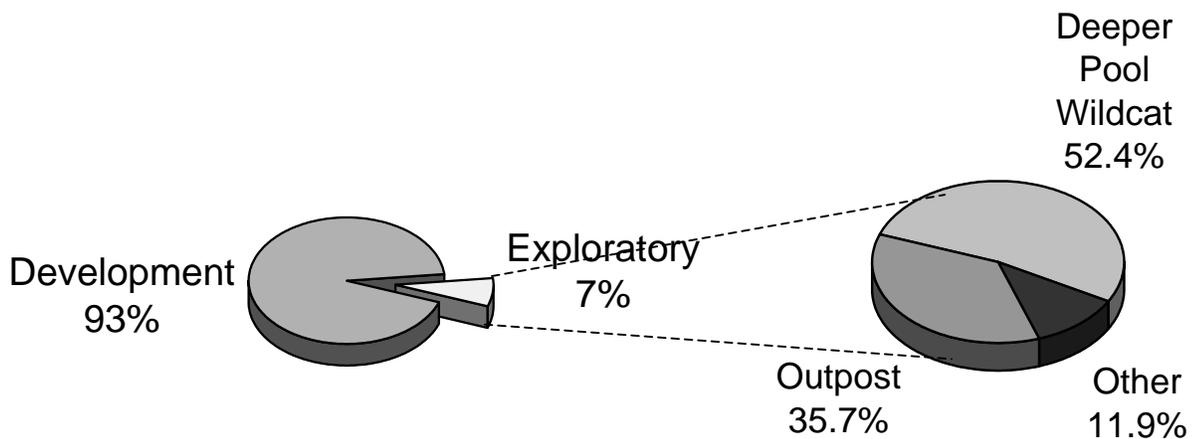


TABLE IV - TEN MOST ACTIVE COUNTIES - 2004

2004 Rank	County	Wells Drilled	2003 Rank	Avg. Depth Per Well	Footage Drilled
1	Monroe	47	(6)	2,594	93,374
2	Stark	44	(1)	4,985	204,370
3	Muskingum	42	(4)	5,333	186,658
4	Coshocton	41	(3)	4,555	177,636
5	Noble	40	(9)	3,742	134,713
6	Lake	30	(11)	3,328	96,519
7	Cuyahoga	27	(15)	3,479	83,488
8	Ashtabula	24	(2)	5,403	118,862
9	Morgan	21	(9)	3,347	56,905
10	Holmes	20	(18)	4,673	88,790
10	Mahoning	20	(7)	5,545	110,897
10	Tuscarawas	20	(4)	5,632	95,752

Figure 6 – Development vs. Exploratory Wells 2004



County Drilling Depth Records

Two new drilling drilling-depth records were set. In Gallia County, a well was drilled 7,146 feet into the Trempealeau dolomite, 3,074 feet deeper than the former record holding well drilled in 1970. In Lake County, a well was drilled 6,355 feet into the granite, 245 feet deeper than the former record holding well drilled in 1980 (Appendix II).

Production

Ohio's total reported crude oil production was

5,785,338 barrels (Figure 7, Table V), an increase of 138,063 barrels (2.44%) from 2003. In 2004, daily production averaged 15,850 barrels compared to 15,472 barrels in 2003. Through 2004, Ohio wells have produced 1,104,651,680 barrels.

Ohio wells produced 90,301,118 mcf of natural gas, a decrease of 3,339,615 mcf (3.57%) from 2003 (Figure 7, Table V). Gas production figures include an estimated 894,070 mcf of natural gas used on the lease. In 2004, daily production averaged 247,400 mcf compared to 256,550 mcf in 2003. Through 2004, Ohio wells have cumulatively produced 8,009,749,438 mcf of natural gas.

Figure 7 - Oil & Gas Production 1995 - 2004

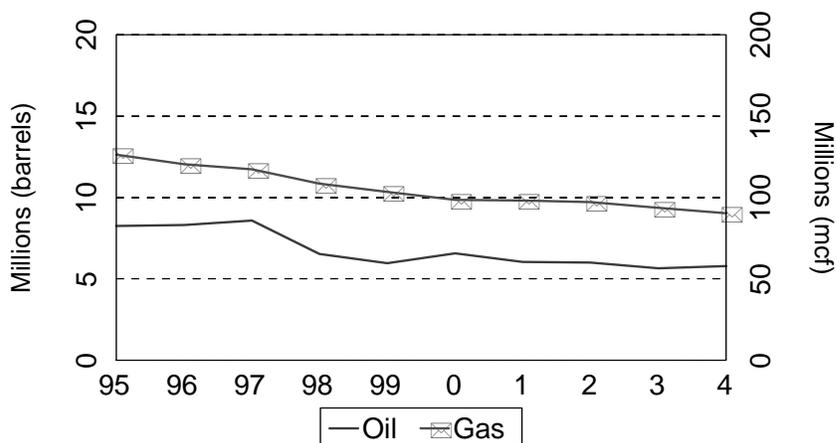


TABLE V – CRUDE OIL & NATURAL GAS PRODUCTION, RESERVES & CONSUMPTION – 1995 - 2004					
Year	OIL (Thousands of barrels)		GAS (mmcf)		
	Production	Reserves	Production	Reserves	Consumption
1995	8,258	53,000	126,336	1,054,000	896,072
1996	8,305	53,000	120,444	1,114,000	936,461
1997	8,593	43,000	117,408	985,000	898,777
1998	6,541	40,000	108,542	890,000	813,022
1999	5,968	51,000	103,541	1,179,000	841,966
2000	6,574	59,000	98,551	1,185,000	890,962
2001	6,050	46,000	98,255	970,000	804,243
2002	6,004	67,000	97,154	1,117,000	830,955
2003	5,647	66,000	93,641	1,126,000	848,391
2004	5,785	N/A	90,301	N/A	N/A

The 2004 production totals were compiled by the Ohio Oil and Gas Association; oil reserve, gas reserve and gas consumption totals are based on data from the Department of Energy, Energy Information Administration.

Market Value

Crude oil production valued at \$219,858,464,

TABLE VI - AVERAGE WELLHEAD PRICE OF OIL & GAS - 1995 - 2004		
Year	Oil \$/Bbl	Gas \$/Mcf
1995	\$16.61	\$2.33
1996	\$19.55	\$2.63
1997	\$17.68	\$2.74
1998	\$11.73	\$2.24
1999	\$16.20	\$2.41
2000	\$26.76	\$4.06
2001	\$21.84	\$4.49
2002	\$22.50	\$3.56
2003	\$27.64	\$5.90
2004	\$38.00	\$6.65

increased 38.20% (\$60,767,783) from its 2003 value. The average price per barrel was \$38.00, a 37.5% increase from 2003's average price of \$27.64 per barrel (Table VI). Posted oil prices ranged from a low of \$29.25 (Jan. 1st-5th; Feb. 7th-9th) to a high of \$51.50 (October 16th - 27th) per barrel.

The market value of natural gas increased 4.48% (\$24,737,099) to \$577,123,783. The average price paid per mcf was \$6.65 in 2004, an increase of \$0.75 per mcf from 2003 (Table VI). The Appalachian price index for Columbia ranged from a low of \$5.54 in September to a high of \$8.51 in December.

Ohio's combined oil and gas market value increased by 12.50% (88,504,882). The total dollar value was \$796,982,247 (Figure 8).

Plugging Activity

For the second consecutive year, drilling out-paced plugging (Figure 9). In 2004, 572 wells were plugged compared to 500 in 2003. This total does not include dry or lost holes that were plugged in 2004. Seventy-five of these wells were plugged through the Orphan Well Program including 60 funded through the Landowner Grants Program. Additionally, 12 previously plugged wells were reopened for the purpose of replugging them.

Wells were plugged in 47 counties (Figure 10). Wayne County (69) was the most active plugging county followed by Muskingum (58), Perry (51), Summit (40) and Coshocton (36).

Figure 8 - Dollar Value of Oil & Gas 1995 - 2004

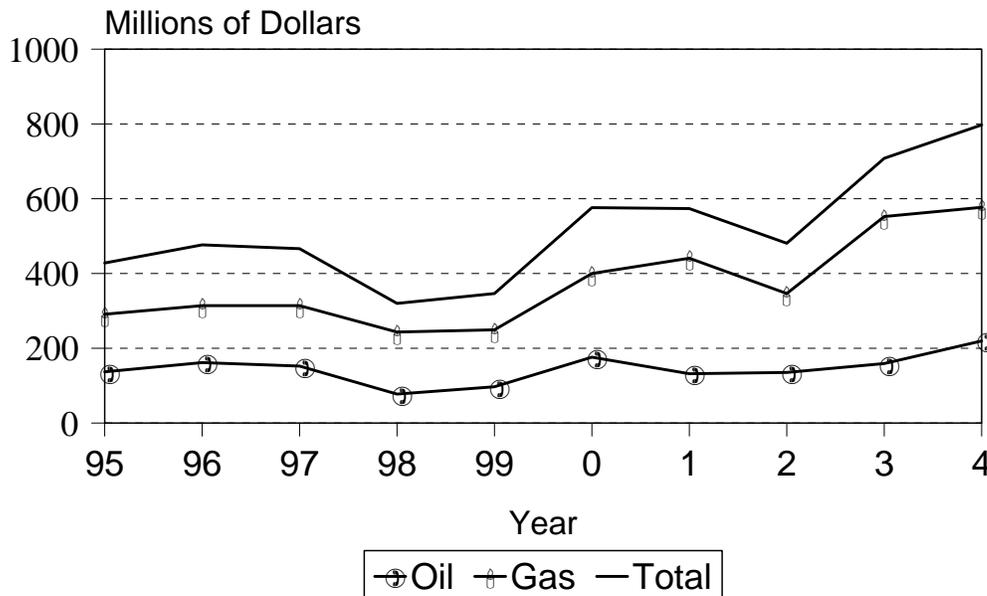


Figure 9 - Wells Plugged vs. Wells Drilled 1995 - 2004

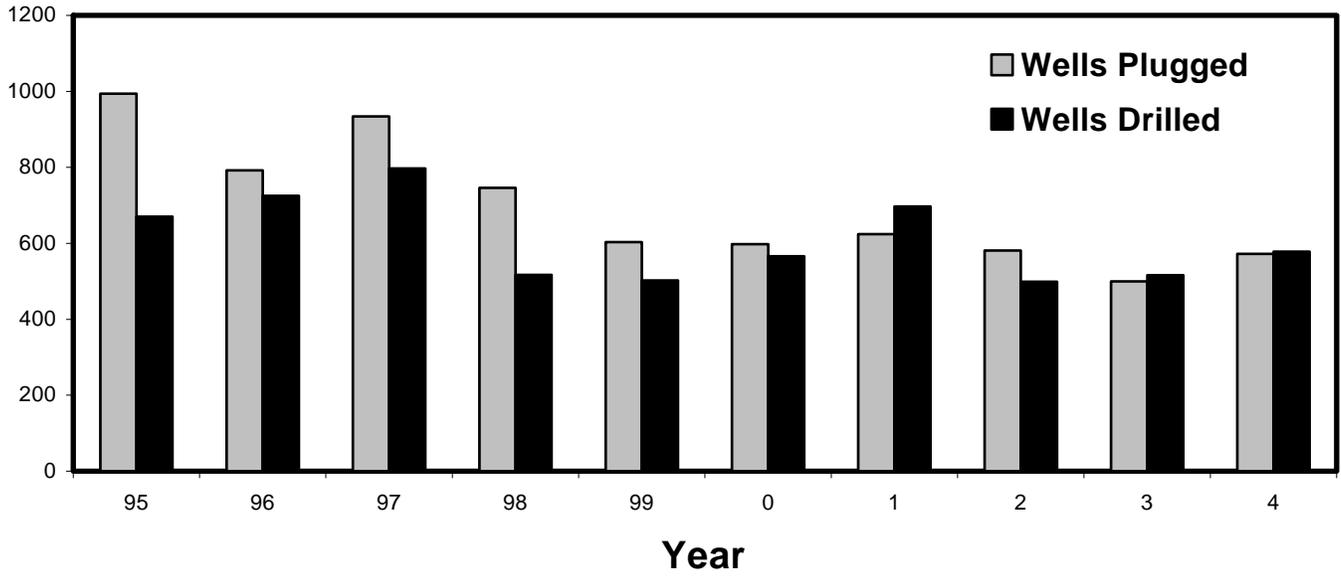


Figure 10 – Wells Plugged by County



WELLS DRILLED IN OHIO

Year	Productive	Dry	Total	Berea	Ohio Shale	Clinton	Trenton	Rose Run	Cambrian
Prior (a) 1888 (b)	6,022	---	6,022				2,234		
1888	617	---	617				542		
1889	1,590	132	1,722				702		
1890	2,497	96	2,593				2,151		
1891	1,709	56	1,765				1,572		
1892	1,551	38	1,589				1,465		
1893	2,067	46	2,113				1,877		
1894 (c)	3,216	85	3,301				3,001		
1895	6,020	127	6,147				5,559		
1896 (d)	5,600	856	6,456				4,339		
1897	3,442	300	3,742			987	2,755		
1898	3,338	172	3,510			132	2,852		
1899	6,399	408	6,807			151	4,469		
1900	6,098	457	6,555			116	5,013		
1901	4,559	573	5,132			148	3,524		
1902	5,651	649	6,300			306	4,213		
1903	5,880	777	6,657			352	4,072		
1904	4,974	858	5,832			382	3,141		
1905	3,027	680	3,707			400	1,578		
1906	2,903	681	3,584			388	1,535		
1907	2,146	611	2,757			521	890		
1908	2,083	695	2,778			522	848		
1909	2,881	966	3,847			694	873		
1910	2,059	670	2,729			668	572		
1911	2,270	507	2,777			641	527		
1912	3,527	956	4,483			926	551		
1913	2,560	603	3,163			643	972		
1914	2,371	534	2,905			943	861		
1915	1,672	498	2,170			952	260		
1916	2,028	525	2,553			469	699		
1917	1,864	504	2,368			587	535		
1918	1,708	446	2,154			605	466		
1919	2,486	585	3,071			940	385		

WELLS DRILLED IN OHIO

Year	Productive	Dry	Total	Berea	Ohio Shale	Clinton	Trenton	Rose Run	Cambrian
1920	2,421	722	3,143			1,240	565		
1921	1,675	620	2,295			853	461		
1922	1,989	607	2,596			906	522		
1923	1,779	537	2,316			642	697		
1924	1,704	439	2,143			605	592		
1925	1,680	414	2,094			434	627		
1926	1,722	382	2,104			522	460		
1927	1,286	337	1,623				262		
1928	1,305	395	1,700				204		
1929	1,936	634	2,570				191		
1930	1,562	572	2,134				205		
1931	789	287	1,076				148		
1932	546	224	770				124		
1933	496	183	679				123		
1934	883	276	1,159				103		
1935	544	192	736				94		
1936	754	246	1,000				81		
1937	813	432	1,245						
1938	622	288	910						
1939	713	319	1,032						
1940	818	410	1,228						
1941	1,034	527	1,561						
1942	652	356	1,008						
1943	625	391	1,016						
1944	647	393	1,040						
1945	649	385	1,034						
1946	885	408	1,293						
1947	899	484	1,383						
1948	921	534	1,455						
1949	626	426	1,052						
1950	666	476	1,142	436	8	418	25		3
1951	626	435	1,061	394	10	406	18		6
1952	670	470	1,140	368	15	459	47		2

WELLS DRILLED IN OHIO

Year	Productive	Dry	Total	Berea	Ohio Shale	Clinton	Trenton	Rose Run	Cambrian
1953 (e)	711	386	1,097	359	21	402	30		6
1954	788	407	1,195	441	13	395	25		2
1955	898	336	1,234						
1956	878	367	1,245	364	13	663	32		5
1957	773	268	1,041	260	12	579	21		2
1958	852	316	1,168	303	13	650	19		5
1959	843	315	1,158	300	11	672	20		13
1960	707	309	1,016	218	5	597	7		20
1961	809	295	1,104	257	10	619	4		42
1962	820	326	1,146	358	2	542	10		72
1963 (f)	748	407	1,155	266	2	443	14	4	302
1964	1,075	1,579	2,654	197	2	499	34	9	1,800
1965 (g)	904	801	1,705	195	2	635	53	16	729
1966	872	399	1,271	227	4	692	18	8	261
1967	953	258	1,211	170	17	853	18	4	132
1968	987	229	1,216	136	66	832	20	6	81
1969	926	183	1,109	104	17	863	13	10	56
1970	1,165	190	1,355	84	15	1,146	5	6	42
1971	1,065	173	1,238	98	11	1,038	5	5	37
1972	1,125	168	1,293	112	21	1,082	3	10	32
1973	1,336	166	1,502	76	31	1,344	5	5	26
1974	1,601	167	1,768	91	13	1,587	3	8	31
1975	1,105	115	1,220	62	6	1,103	5	17	22
1976	1,774	164	1,938	165	30	1,631	38	18	16
1977	2,454	171	2,625	389	34	2,083	33	11	15
1978 (h)	3,132	283	3,415	430	22	2,834	22	27	12
1979	3,480	179	3,659	542	131	2,848	22	29	23
1980	4,935	165	5,100	867	78	3,734	1	24	31
1981	5,685	400	6,085	733	543	4,366		16	50
1982	4,487	342	4,829	754	458	3,426		11	4
1983	4,000	299	4,299	557	533	3,203	1	7	51
1984	4,593	370	4,963	612	329	3,827		9	65

WELLS DRILLED IN OHIO									
Year	Productive	Dry	Total	Berea	Ohio Shale	Clinton	Trenton	Rose Run	Cambrian
1985	3,536	214	3,750	335	315	3,042		19	94
1986	1,725	125	1,850	185	76	1,482		28	62
1987	1,721	161	1,882	153	40	1,454		70	55
1988	1,265	156	1,421	110	43	1,037		94	62
1989	1,153	159	1,312	69	145	890		92	77
1990	1,147	180	1,327	61	97	863		143	102
1991	1,000	169	1,169	89	89	794		116	108
1992	709	165	874	100	51	464		139	87
1993	643	180	823	60	35	330	2	260	89
1994	601	182	783	26	13	301	9	269	75
1995	507	163	670	25	11	253	2	202	94
1996	559	166	725	35	42	253	1	219	90
1997	619	178	797	33	20	277	0	223	110
1998	383	135	518	66	16	154	0	161	61
1999	407	95	502	32	65	177	5	106	55
2000 (i)	454	112	566	18	14	281	3	124	77
2001	597	100	697	35	29	396	1	113	58
2002	427	72	499	7	45	264	0	87	47
2003	451	65	516	30	60	254	2	82	40
2004	523	55	578	29	99	310	0	66	24
TOTAL (j)	216,640	42,257	258,897	12,425	3,803	77,422	71,088	2,873	5,503

References

1. Years 1888-1950: Alkire, Robert L., 1951, Oil and Gas Production, History, Regulation, Secondary Recovery and Bibliography, 8, part 2 of Ohio Division of Geological Survey Report of Investigations: 45-46 pp.
2. Years 1950-2004: Statistics from Annual Oil & Gas Statistical Reports published by Ohio Division's of Mineral Resources Management, Oil and Gas and Geological Survey.
3. Numbers were not available for blank formation fields.

Historical Footnotes

- a. Ohio lays claim to the first discovery of oil from a drilled well. In 1814, saltwater well drillers struck oil in Olive Township of Noble County at 475 feet.
- b. Ohio's first commercial oil and gas well was put into production in 1860 at Macksburg in Washington County.
- c. Alkire notes that the statistics for years 1894-1904 were incomplete and estimated that the total number of wells not accounted for during those years is approximately 12,000.
- d. Ohio was the nation's leading oil producer in 1896.
- e. Widespread acceptance of the hydraulic fracture method for increasing production in 1953.
- f. Morrow County Oil Boom in 1963.
- g. Creation of Ohio Division of Oil and Gas in 1965.
- h. Tight formation tax credit.
- i. Creation of Ohio Division of Mineral Resources Management in 2000.
- j. Total number of wells may actually be 270,897 (See footnote c).

COUNTY DRILLING DEPTH RECORDS

COUNTY	TOWNSHIP	PERMIT NO.	OPERATOR	WELL NO.	LEASE NAME	COMPLETION DATE	TOTAL DEPTH	FORMATION AT T.D.	WELL CLASS
ADAMS	FRANKLIN	11	OXFORD OIL CO.	1	J. RUSSELL & M. TENER	07/07/79	3886	GRANITE WASH	FWC
ALLEN	SPENCER	64	ALCO OIL CO.	2	POHLMAN, FRUEND, ETZ HORN	12/31/65	3266	GRANITE	FWC
ASHLAND	LAKE	1762	ROY STEWART	1	KENNETH & REX MASHER	02/04/60	5485	TREMPEALEAU	DPWC
ASHTABULA	NEW LYME	2272	POI ENERGY	1	LAUTANEN	09/01/85	7124	GRANITE	DPWC
ATHENS	DOVER	3062	QUAKER STATE	2	MILLFIELD COAL & MINING	07/17/84	6525	ROSE RUN	FWC
AUGLAIZE	ST. MARYS	71	WEST OHIO OIL & GAS	1	D. & B. HOELSCHER	12/05/70	3067	GRANITE	DPWC
BELMONT	SMITH	108	NAT. GAS OF W. VA.	8	T. H. MOBLEY	02/07/41	7887	CLINTON	FWC
BROWN	STERLING	6	SPENCER PETROLEUM CORP.	1	GRIFFITH	03/13/93	3350	GRANITE	FWC
BUTLER	LEMON	4	ARMCO STEEL CORP.	1	ARMCO STEEL CORP.	03/12/67	3296	"MIDDLE RUN"	IWDW
CARROLL	EAST	1850	NEWSTAR ENERGY USA INC.	1	BRYAN UNIT	03/30/97	9460	TREMPEALEAU	DPWC
CHAMPAIGN	WAYNE	20	INDUSTRIAL GAS ASSOC.	1	P. & C. HOFFMAN	06/26/78	3325	MT. SIMON	FWC
CLARK	MADISON	D-2	T. D. FRIEND	1	MATTISON	06/14/26	4647	PRE MT. SIMON	FWC
CLERMONT	STONELICK	3	CONTINENTAL OIL CO.	1	C. WIKOFF	07/03/60	3435	MT. SIMON	FWC
CLINTON	WILSON	10	STOCKER & SITLER INC.	1	COY	01/18/83	3603	GRANITE	FWC
COLUMBIANA	HANOVER	648	MANAGEMENT CONTROL	3	F. MURRAY	07/28/70	10242	GRANITE	DPWC
COSHOCTON	CRAWFORD	6397	LAKE REGION OIL INC.	2	LEVI M. TROYER	07/23/92	7950	MT. SIMON	DPWC
CRAWFORD	VERNON	6	HAYNES O&G ENTERPRISES	1	DON D. CRUM	01/09/63	3879	EAU CLAIRE	FWC
CUYAHOGA	MAYFIELD	1625	BASS ENERGY CO. INC.	1	MARCONI MEDICAL SYSTEMS	03/07/01	6550	GRANITE	DPWC
DARKE	GREENVILLE	13-A	UNKNOWN	1	EDWARD BARNES	05/26/06	2850	CAMBRIAN	FWC
DEFIANCE	MARK	28	S. E. BROWN	1	P. HAVER	10/22/62	3606	MT. SIMON	FWC
DELAWARE	TRENTON	354	R.C. POLING CO. INC.	1	COCKRELL-GODSHALL UNIT	01/22/91	4873	GRANITE	DPWC
ERIE	FLORENCE	19	SUN OIL CO.	1	A. HERMAN ETAL.	05/01/67	4466	GRANITE	SWIW
FAIRFIELD	RUSH CREEK	1136	HOPEWELL O. & G. DEV. CO.	1	R. BIGHAM	06/16/94	5924	GRANITE	DPWC
FAYETTE	UNION	1	KEWANEE OIL CO.	1	E. HOPKINS	07/12/57	4708	GRANITE	FWC
FRANKLIN	PLEASANT	7	BARNWELL PRODUCING CO.	1	OAKHURST COUNTRY CLUB	08/08/64	3753	MT. SIMON	FWC
FULTON	CHESTERFIELD	47	LIBERTY PETR. CORP.	1	CLYDE JOHNSTON	03/21/69	3793	MT. SIMON	FWC
GALLIA	HARRISON	985	BAKERWELL INC.	1	JARRELL UNIT	03/24/04	7146	TREMPEALEAU	FWC
GEAUGA	TROY	1534	LOMAK PETROLEUM	1	J. VOYTKO	07/01/88	6888	TREMPEALEAU	DPWC
GREENE	CAESARS CREEK	D-7	SUN OIL CO.	1	WM. M. HENRY	04/15/40	1958	KNOX	FWC
GUERNSEY	ADAMS	782	LAKE SHORE PIPELINE	1	WM. R. MARSHALL	05/31/61	8622	KNOX	FWC
HAMILTON	CROSBY	1	CONTINENTAL OIL CO.	1	WALTER C. BRISBIN	11/01/59	2730	EAU CLAIRE	FWC
HANCOCK	UNION	139	FRANK M. DEVER	1	C. & M. FRAZIER	06/02/64	3017	GRANITE	FWC
HARDIN	DUDLEY	79	MCPAHON-BULLINGTON	1	WOLF	01/07/64	3002	KNOX	FWC
HARRISON	GREEN	355	STOCKER & SITLER INC.	1	CHARLENE SCHANEY ETAL.	07/30/79	10288	TREMPEALEAU	DPWC
HENRY	HARRISON	36	CALLANDER & KIMBREL	1	K. HALL	10/10/73	3480	GRANITE	DPWC
HIGHLAND	FAIRFIELD	7	OHIO VALLEY OIL & GAS	1	COURTNEY	01/20/72	3610	GRANITE	FWC
HOCKING	STARR	1222	E. J. DUNIGAN	1	M. & H. HOCKMAN	06/30/66	6495	MT. SIMON	FWC
HOLMES	SALT CREEK	1283	G.C. & J.A. PARKER	1	DAN D. TROYER	11/12/63	7369	TREMPEALEAU	FWC
HURON	WAKEMAN	103	APPALACHIAN EXPLOR. INC.	1	WOLF	10/05/81	4574	GRANITE WASH	FWC
JACKSON	FRANKLIN	76	WORTHINGTON OIL CO.	1	G. & I. WOOD	07/08/64	6320	GRANITE	FWC
JEFFERSON	STEUBENVILLE	452	KST OIL & GAS CO. INC.	1	HUBERTA MINING CO. INC.	03/23/84	8053	CLINTON	DPWC
KNOX	PIKE	1413	DAVID L. CANTWAY	1	E. CUNNINGHAM	08/07/61	5745	GRANITE	FWC
LAKE	LEROY	1094	GREAT PLAINS EXPL. LTD.	1	VROOMAN	01/24/04	6355	GRANITE	DPWC

COUNTY	TOWNSHIP	PERMIT NO.	OPERATOR	WELL NO.	LEASE NAME	COMPLETION DATE	TOTAL DEPTH	FORMATION AT T.D.	WELL CLASS
LAWRENCE	SYMMES	174	J. STANLEY GOLDBERG	1	A. PAYNE	04/01/66	7002	GRANITE	FWC
LICKING	PERRY	4792	RONALD F. MORAN	1	RON MORAN	03/08/84	6237	GRANITE	SWIW
LOGAN	JEFFERSON	86	WORTHINGTON OIL CO.	1	LENA COMER	05/11/76	3402	MT. SIMON	FWC
LORAIN	GRAFTON	1370	KENOIL/KEN R. MILLER	1	LAWRENCE PALL	08/24/91	5018	TREMPEALEAU	DPWC
LUCAS	HARDING	60	LIBERTY PETR. CORP.	1	KETRING UNIT	08/24/72	3915	GRANITE	FWC
MADISON	FAIRFIELD	3	AMERADA PETR. CORP.	1	J. HUME	11/01/65	3631	GRANITE	FWC
MAHONING	GOSHEN	2718	BELDEN & BLAKE CO.	4-11979	R. & R. BRICKER	07/07/97	8600	TREMPEALEAU	DPWC
MARION	CLARIDON	8	UNITED PRODUCING	1	H. & M. MITCHELL	03/14/62	3672	GRANITE	FWC
MEDINA	HINCKLEY	1143	WISER OIL CO.	1-A	F. L. SMITH	01/03/59	7040	GRANITE	FWC
MEIGS	OLIVE	442	SINCLAIR-PRAIRIE OIL CO.	1	W. T. LONGWORTH	05/04/44	7466	TRENTON	FWC
MERCER	CENTER	141	HARNER UNION OIL CO.	2	M. & M. YEWES	02/09/71	3215	GRANITE	DPWC
MIAMI	LOST CREEK	3	NATIONAL ASSOC. PETR.	1	E. WALKER	10/30/58	3513	GRANITE	FWC
MONROE	MALAGA	3287	TRANS ATLANTIC ENERGY	2	HUDSON	01/22/89	7507	CLINTON	DPWC
MONTGOMERY	MAD RIVER	D-2	DAYTON	M	DAYTON	01/1887	2440	UNKNOWN	UNKN.
MORGAN	CENTER	4494	ARTEX OIL COMPANY	1	OP/CLARK-MILLER	07/26/03	8202	TREMPEALEAU	DPWC
MORROW	PERRY	3737	STAR EXPL. CORP.	1	R. & W. BREWER	12/19/86	5000	GRANITE	DPWC
MUSKINGUM	HIGHLAND	7959	CGAS EXPLORATION INC.	7-2108	G. VICKERS	07/07/97	7316	TREMPEALEAU	DPWC
NOBLE	ELK	1278	AMERADA PETR. CORP.	1	R. ULLMAN	02/01/67	11442	GRANITE	DPWC
OTTAWA	CARROLL	50	FRED E. FITZGERALD	1	RAYMOND ARNDT	08/07/68	2287	ST. PETER	FWC
PAULDING	JACKSON	13	MT. PLEASANT MINES LTD.	1	H. & E. AREND	10/30/76	3440	GRANITE	FWC
PERRY	JACKSON	6595	R.C. POLING CO. INC.	1	RUSH CREEK PARTNERS, ETAL.	04/20/85	6395	GRANITE	SWIW
PICKAWAY	PICKAWAY	24	RAMCO OIL & GAS CORP.	1	M. KERNS	01/17/85	4500	GRANITE	FWC
PIKE	BEAVER	1	FRANK D. STAHLER	1	R. BAPST	06/14/50	4227	ST. PETER?	FWC
PORTAGE	DEERFIELD	2860	VIKING RESOURCES CORP.	1	VIKING RESOURCES CORP.	05/24/82	8800	GRANITE WASH	DPWC
PREBLE	WASHINGTON	D-3	DOC TOLLIVER	3	A. H. CHRISTMAN	06/01/29	1750	ST. PETER	FWC
PUTNAM	LIBERTY	31	OHIO OIL CO.	1	L. BARLAGE	03/21/44	3377	GRANITE	FWC
RICHLAND	WASHINGTON	431	TRI-STATE PRODUCING CO.	2	C. & K. SCOTT	09/05/66	5503	GRANITE	DPWC
ROSS	GREEN	8	WELL SUPERVISION INC.	1	M. IMMELL	08/24/64	4168	MT. SIMON	FWC
SANDUSKY	TOWNSEND	77	EAST OHIO GAS CO.	2	V. & I. HAFF	11/17/60	3128	GRANITE	FWC
SCIOTO	GREEN	212	USS CHEMICALS/US STEEL	1	USS CHEMICALS/US STEEL	07/05/68	5617	GRANITE	IWDW
SENECA	ADAMS	128	ASHLAND OIL	1	W. STIGAMIRE	01/24/65	3175	MT. SIMON	FWC
SHELBY	SALEM	13	GUMP OIL CO.	1	J. & B. FOGY	11/10/56	3360	GRANITE	FWC
STARK	PARIS	5052	VIKING RESOURCES CORP.	1	HANNA UNIT	09/02/97	8292	ROSE RUN	POOL
SUMMIT	TWINSBURG	1591	K.S.T. OIL & GAS CO.	5	K.S.T. OIL & GAS CO.	07/18/84	7225	GRANITE WASH	SWIW
TRUMBULL	WEATHERSFIELD	3670	D & L ENERGY, INC.	1	NMC METALS	03/14/98	7722	TREMPEALEAU	DPWC
TUSCARAWAS	PERRY	5022	STOCKER & SITLER INC.	3-2417	BARDALL	01/14/98	8646	TREMPEALEAU	DPWC
UNION	DOVER	69	FUNK EXPLORATION	1	YODER	08/15/84	3500	GRANITE	FWC
VAN WERT	JENNINGS	44	WEST OHIO GAS CO.	5	A. & M. MILLER	01/05/73	3242	GRANITE	DPWC
VINTON	VINTON	924	COLUMBIA NAT. RES. INC.	723984	MORRIS	03/25/00	5700	TREMPEALEAU	FWC
WARREN	WAYNE	C-2627	OHIO GEOLOGICAL SURVEY	DS-2	AMERICAN AGGREGATES CORP.	04/26/89	5380	"MIDDLE RUN"	CORE
WASHINGTON	LAWRENCE	8666	CARTER RESOURCES	1	STRAUSS UNIT	12/06/89	10200	ROSE RUN	DPWC
WAYNE	CHIPPEWA	71	EAST OHIO GAS CO.	2	N. STEINER	08/12/61	6919	GRANITE	DPWC
WILLIAMS	BRIDGEWATER	46	COLUMBIA GAS TRANS.	11061	COOK	12/31/71	4497	GRANITE WASH	FWC
WOOD	LIBERTY	D-6	J. S. BRAILEY	1	S. KILLIAN	08/25/37	2927	GRANITE	DPWC
WYANDOT	JACKSON	D-8	DIBBLE & MILLER	1	P. PARSELL	03/07/47	5632	GRANITE	FWC

APPENDIX II – RESERVOIRS BY DISCOVERY YEAR AND FIELD NAME

Reservoir	Year	Depth	Field Name	County
Beekmantown	1968	8300	North Georgetown	Columbiana
Berea	1860	750	South Lisbon	Columbiana
Berea, Second	1896	1550	McConnelsville	Morgan
Big Injun	1891	1600	Sisterville	Monroe
Brill	1922	1050	Fairfield-Wash.	Washington
Buell Run	1888	275	East Fork	Washington
Clinton	1887	1957	North Berne	Fairfield
Cow Run	1860	200	Buck Run	Morgan
Germantown	1904	1075	Fifteen	Washington
Goose Run	1899	150	Goose Run	Washington
Hamden	1901	700	Hamden	Vinton
Keener	1891	1550	Sisterville	Monroe
Macksburg	1860	450	Macksburg	Washington
Maxton	1893	1200	Archers Fork	Washington
Mitchell	1898	400	Mitchell	Washington
Newburg	1886	2550	Newburgh Heights	Cuyahoga
Ohio shale	1861	700	Unnamed	Lake
Oriskany	1899	2000	Austinburg	Ashtabula
Peeker	1860	150	Buck Run	Morgan
Rose Run	1965	6520	Baltic	Holmes
Salt Sand	1893	1050	Archers Fork	Washington
Squaw	1896	1650	Hohman	Washington
Trempealeau	1909	2200	Tiffin	Seneca
Trenton	1884	1092	Findlay	Hancock
Weir	1909	340	Stockdale	Pike
Williamsport	1968	5000	Groundhog Creek	Meigs

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